State Revolving Fund Loan Programs
Drinking Water, Wastewater, Nonpoint Source

ENVIRONMENTAL ASSESSMENT
AND
FINDING OF NO SIGNIFICANT IMPACT

CITY OF GOSHEN
COMBINED SEWER OVERFLOW ABATEMENT PROJECTS
STATE REVOLVING FUND PROJECT #: WW 09 07 20 02

DATE: July 24, 2009

TARGET PROJECT APPROVAL DATE: August 24, 2009

I. INTRODUCTION

The above entity has applied to the Clean Water State Revolving Fund (CWSRF) Loan Program for a loan to finance all or part of the wastewater project described in the accompanying Environmental Assessment (EA). As part of facilities planning requirements, an environmental review has been completed which addresses the project's impacts on the natural and human environment. This review is summarized in the attached EA, which can also be viewed at http://www.in.gov/ifa/srf/.

II. PRELIMINARY FINDING OF NO SIGNIFICANT IMPACT (FNSI)

The CWSRF has evaluated all pertinent environmental information regarding the proposed project and determined that an Environmental Impact Statement is not necessary. Subject to responses received during the 30-day public comment period, and pursuant to Indiana Code 4-4-11, it is our preliminary finding that the construction and operation of the proposed facilities will result in no significant adverse environmental impact. In the absence of significant comments, the attached EA shall serve as the final environmental document.

III. COMMENTS

All interested parties may comment upon the EA/FNSI. Comments must be received at the address below by the deadline date above. Significant comments may prompt a reevaluation of the preliminary FNSI; if appropriate, a new FNSI will be issued for another 30-day public comment period. A final decision to proceed, or not to proceed, with the proposed project shall be effected by finalizing, or not finalizing, the FNSI as appropriate. Comments regarding this document should be sent within 30 days to:

Max Henschen
Senior Environmental Manager
State Revolving Fund
100 N. Senate Ave. IGCN 1275
Indianapolis, IN 46204
317-232-8623; mhensche at ifa.in.gov

ENVIRONMENTAL ASSESSMENT

I. PROJECT IDENTIFICATION

Project Name and Address:	City of Goshen Combined Sewer Overflow Abatement Projects 202 South 5th Street Goshen, IN 46526
SRF Project Number:	WW 09 07 20 02
Authorized Representative:	Allan Kauffman, Mayor

II. PROJECT LOCATION

Goshen is located in Elkhart County along US Route 33, where state roads 15, 4 and 119 converge. See figures 1-1 and 1-2 and 1-6. The Combined Sewer Overflow (CSO) Abatement projects are in Elkhart Township on or near the wastewater treatment plant (WWTP) site.

CSO Detention Facility Project: The facility will be bounded by the Norfolk Southern Railroad to the north, Indiana Avenue to the east, and the Elkhart River to the south and west. The CSO Detention Facility will be located in the NE ¼ of Section 8, Township 36 North, Range 6 East, in the Goshen USGS 7.5 minute quadrangle.

WWTP CSO Diversion Pump Station and Force Main Project: The diversion pump station will be located within the existing WWTP property. The force main will run east, parallel to and south of Wilden Avenue, and then south along Indiana Avenue to the proposed CSO Detention Facility. The CSO Diversion Pump and Force Main Project will be located in the SE ¼ of Section 5, Township 36 North, Range 6 East, in the Goshen USGS 7.5 minute quadrangle.

90-inch CSO Trunk Line Sewer: The 90-inch Sewer will extend from the modified 1st Street and Wilkinson Street Flow Regulator and follow 1st Street north to River Avenue. It will be bounded by the Norfolk Southern Railroad to the north and the Elkhart River to the south and west. The sewer line will begin in the NW ¼ of Section 9, Township 36 North, Range 6 East, and end at the CSO Detention Facility in the NE ¼ of Section 8, Township 36 North, Range 6 East, in the Goshen USGS 7.5 minute quadrangle.

CSO Sewer Crossing Project: This project is located west of the proposed detention facility and south of the Norfolk Southern Railroad crossing of the Elkhart River. The sewer crossing project is located in the NE ¼ of Section 8, Township 36 North, Range 6 East, in the Goshen USGS 7.5 minute quadrangle.

III. PROJECT NEED AND PURPOSE

Goshen has a combined sewer system with three active CSOs: CSO 002, CSO 004, and CSO 007. In a combined sewer system, both storm water and sanitary wastewater flow into common sewers; that combined flow is meant to be sent to a treatment facility. However, during heavy storms, the flow often exceeds the capacity of the collection system and treatment facility; the excessive flow is discharged into streams and rivers through the CSOs. Due to concerns about water quality and public health related to these discharges, Goshen has developed a Long Term Control Plan (LTCP), as required by Indiana environmental regulations. The CSO Abatement projects described in this document address CSOs and meet objectives in the city's LTCP.

The CSO Detention Facility will collect wastewater currently overflowing into the Elkhart River at the three active CSO sites. The facility is necessary to meet the requirements of the LTCP and National Pollutant Discharge Elimination System protocol. A new electrical substation will need to be constructed at the CSO Detention Facility to provide power.

The CSO Sewer Crossing Project will eliminate CSO 002 and will direct flow previously discharged into the river to the proposed Detention Facility.

The 90-inch CSO Trunk Line Sewer Project will eliminate CSO 004 and will direct flow previously discharged into the river to the proposed Detention Facility.

The WWTP CSO Diversion Pump Station and Force Main Project will eliminate all but emergency overflows to CSO 007 and will direct flow previously discharged into the river to the proposed Detention Facility.

IV. PROJECT DESCRIPTION

CSO Detention Facility:

- Construct new headworks structure equipped with three large grinder pumps;
- Install four submersible mixed-flow pumps to direct the grinder effluent to a screening structure;
- Construct a new screening structure and mount three mechanically-cleaned and inclined fine screens;
- Construct two rectangular clarifiers in series, with a combined storage volume of approximately 5.0 MG;
- Construct new chlorination/dechlorination facilities consisting of a sodium hypochlorite disinfection system and a sodium bisulfite dechlorination system;
- Construct a control building to house electrical power, instrumentation, and control equipment;
- Construct two new outfall structures: one for normal effluent flow and the second as an emergency bypass outfall in the event of power failure;
- Construct a pump station using submersible chopper pumps to deliver wastewater surcharge in the 27-inch trunk line sewer to the CSO Detention Facility;
- Construct a pump station using submersible chopper pumps to deliver flow from the proposed CSO 002 Sewer Crossing of the Elkhart River to the CSO Detention Facility via a force main;
- Construct a new electrical substation.

WWTP CSO Diversion Pump Station and Force Main:

- Construct a WWTP CSO Diversion Pump Station using submersible chopper pumps to deliver CSO 007 flow through a force main to the CSO Detention Facility;
- Replace solenoids on the 54-inch sluice gate pneumatic actuator, install a new pneumatic actuator with built-in position feedback on the 24-inch sluice gate, and install new fixed weirs at the 1st Street and Wilkinson Street flow control structure;
- Install a new throttling valve on the 27-inch/30-inch sewer in the WWTP.

90-inch CSO Trunk Line Sewer:

- Construct a 90-inch sewer approximately 3,150 feet in length connecting the flow control structure at 1st Street and Wilkinson Street to the proposed CSO Detention Facility.

CSO Sewer Crossing:

- Construct a 36-inch diameter ductile iron CSO transport sewer approximately 240 feet long and a 42-inch diameter reinforced concrete pipe approximately 185 long across the Elkhart River between the existing CSO 002 flow control structure and the proposed CSO Detention Facility.

V. Estimated Project Costs, Affordability and Funding

A. Selected Plan Estimated Cost Summary

Construction Costs

CSO Detention Facility	
CSO 002 Pump Station	$ 1,482,000
27-inch Sewer Overflow Pump Station	687,000
Grinder pumps	1,745,000
90-inch Sewer Lift Station	1,852,000
Emergency Overflow Outfall Structure	176,000
Screen Structure	2,863,000
Flush Tank Clarifier No. 1	3,261,000
Flush Tank Clarifier No. 2	3,108,000
Outfall Structures	452,000
Disinfection Building	891,000
Dechlorination Building	847,000
Control Building	897,000
Electrical Substation	732,000
Site Preparation	3,352,000
Sub-Total	$ 22,345,000

WWTP CSO Diversion Pump Station		
Pump Station		$ 978,000
Remote Monitoring Locations		227,000
Throttling Valve Structure		109,000
Site Preparation		772,000
	Sub-Total	$ 2,086,000
90-inch Trunk Line Sewer		
Trunk Line Sewer		$ 4,359,000
	Sub-Total	$ 4,359,000
CSO Sewer Crossing		
Open Cut Construction		$ 600,000
	Sub-Total	$ 600,000
	Construction Costs	**$ 29,390,000**
	Contingencies (10%)	**2,939,000**
	Total Construction Costs	**$ 32,329,000**
Non-Construction Costs		
Administrative and Legal		$ 340,000
Bidding and Construction Engineering Services		1,230,000
Programming		206,000
Project Inspection		1,055,000
	Non-Construction Cost	**$ 2,831,000**
	Total Estimated Project Cost	**$35,160,000**

B. Goshen will finance the project with a 20-year loan of approximately $35,160,000 from the State Revolving Fund (SRF) Loan Program at an interest rate to be determined at the time of loan closing. Monthly user rates and charges may need to be analyzed to determine if adjustments are required for loan repayment.

VI. DESCRIPTION OF EVALUATED ALTERNATIVES

No Action: The no-action alternative would result in noncompliance with the city's CSO LTCP and also subject the city to possible regulatory action. For these reasons, this alternative was not considered.

Optimum Operation: There are currently no CSO treatment facilities in Goshen, and the WWTP cannot handle the peak flow rate and total volume of wastewater collected during storm events. Therefore, the option of optimum operation is not feasible and was rejected.

Collection System Rehabilitation and Replacement: There are two options associated with this alternative: (1) replace and repair leaking sewers; this alternative is not feasible because the WWTP cannot handle flows from the combined sewers during storm events and, overflows would still occur; (2) separate all of the combined sewers in Goshen; this option is cost-prohibitive and was not recommended in the approved LTCP. Therefore this option was rejected.

Selected Plan: The city has chosen to implement the projects described above in Section IV. The projects will eliminate two of the city's three CSOs and will reduce the third to discharging only during emergency events. Within this plan, the city examined alternatives for screening, disinfection, pumping, clarification, river crossing method (horizontal directional drilling [HDD], pipe ramming, open cut), and other project elements. In a discussion on March 10, 2009 with the U.S. Fish and Wildlife Service, one of the city's engineering consultants noted that the pipe ramming method of crossing the Elkhart River was rejected because of a lack of staging area for the equipment and because of extensive vibrations that would occur, possible affecting nearby buildings on the south river bank. The HDD method was rejected because the pipe would not have sufficient slope to allow the pipe to be scoured clean during low flows.

VII. Environmental Impacts of the Feasible Alternatives

A. Direct Impacts of Construction and Operation

Undisturbed/Disturbed Land: A reconnaissance level archaeological survey on May 19, 2009, determined that the project areas had been previously disturbed by non-agricultural activity; the survey did not find archaeological resources.

Structural Resources (Figures 5-1, 5-2, 5-3 & 5-4): The project will not affect any historically or architecturally significant structures or sites.

Surface Waters and Wetlands (Figures 5-5 & 5-6): The Elkhart River borders the project area to the south. The river is not classified as a Water of High Quality, Exceptional Use Stream, Salmonid Stream, or Natural, Scenic, and Recreational River or Stream. However, the river is listed on the May 30, 2007 Natural Resources Commission Non-Rule Policy Document: *Outstanding Rivers List for Indiana,* Information Bulletin #4, second amendment.

The CSO Detention Facility and its two outfall structures may have an impact on the Elkhart River during construction activities due to surface runoff, erosion, and sedimentation. The city has applied to the IDEM Office of Water Quality for Section 401 Water Quality certification (Application #2009-153-20-EMP-A). The city has also applied to the U.S. Army Corps of Engineers regarding a wetland permit which may be necessary (Application # LRE2007-01396-120).

The CSO 002 river crossing will be open cut construction. Potential impacts include river bank erosion and riverbed silt migration. These impacts are expected to be minor and will be minimized through proper mitigation techniques, including extensive erosion protection along the river bank and temporary scour protection along the river bed. During construction of the crossing, temporary cofferdams will be used to constrict flow to one half the width of the river at a time. A hydraulic analysis has been conducted to determine the effects of contraction on depth and velocity. The study concluded that flows within the contracted portion will remain subcritical throughout, indicating that a hydraulic jump will not occur. Backwater effects caused by the contraction were determined to be minimal. Following construction, the cross section of the river will be restored to its approximate original contour. All disturbed areas of the riverbed will be covered with a layer of 2- to 4-inch diameter glacial stone to prevent silt migration.

The CSO Detention Facility site contains a wetland fringe along the southern border. Construction in this wetland area will be limited to the outfall emergency outfall structures.

The WWTP CSO Diversion Pump Station and Force Main projects will not affect wetlands.

The 90-inch CSO Trunk Line project will not affect the wetland fringe on the southern end of the project area along the Elkhart River.

100-Year Floodplain (Figure 5-7 & 5-8): Only the river crossing, the CSO Detention Facility outfalls and a small part of the west end of the Detention Facility are in the 100-year floodplain. Each outfall structure will be built with flap gates to protect the facility. The city's consultants have applied to the IDNR for a construction-in-a-floodway permit (Application # FW-2524).

Groundwater: The CSO Detention Facility and the 90-inch Trunk Line will require dewatering procedures during construction. The city will use dewatering wells during construction of the Detention Facility to ensure clear, sediment-free water. Water from these wells will discharge into sedimentation basins prior to entering the Elkhart River. The scale of dewatering for the 90-inch Trunk Line will be less significant, likely via trench dewatering.

The CSO 002 Sewer River Crossing will also require dewatering during construction. Dewatering will take place within the confines of the cofferdams to provide suitable working conditions for the excavation and placement of the sewer pipe. All water from within the cofferdams will be pumped to a sedimentation basin located on the east bank of the river.

The WWTP CSO Diversion Pump Station and Force Main project will not impact groundwater.

Plants and Animals: For the CSO Detention Facility, trees will need to be removed along the bank of the Elkhart River for construction of the CSO Detention Facility outfall structures. Trees will also need to be removed for the 90-inch Trunk Line construction.

One of the city's engineering consulting firms prepared a February 9, 2009 memorandum titled *Response to Regulator Comments for Proposed Open Cut Excavation Installation of CSO 002 River Crossing in Goshen, Indiana* (hereafter referred to as the "memorandum"). The memorandum states that the city will replace all removed trees that are 10-inches in diameter at breast height with five trees at least 2-inches in diameter at breast height. The memorandum also states that the city will plant native shrubs and vines around the outfalls, except where access is needed for sampling or maintenance.

For the CSO 002 Sewer River Crossing, trees on the east and west banks of the river will need to be removed. Although the memorandum stated that the construction corridor width would be 35-50 feet, correspondence dated June 18, 2009 from the city indicated that the construction corridor width had increased to 118 feet. The city surveyed the river crossing area for the presence of federal or state-listed mussels, but none were found. Impacts to fishes and their habitat will occur during the construction of the Sewer River Crossing, but these will be temporary impacts. The

city will replace disturbed river bed with substrate suitable for spawning and will not work in the river during the spawning season of April 1 through June 30, according to the memorandum.

The WWTP CSO Diversion Pump Station and Force Main project will not impact trees.

The construction of the CSO Detention Facility, 90-inch Trunk Line, and WWTP Pump Station and Force Main will not negatively impact state or federally listed endangered species.

Prime Farmland: The proposed projects will not affect prime farmland.

Air Quality: Air quality will be temporarily impacted by construction activities, including vehicle exhaust and dust.

Open Space and Recreational Opportunities: The proposed projects will neither create nor destroy open space and recreational opportunities.

The proposed projects will not affect National Natural Landmarks or the Lake Michigan Coastal Zone.

B. Indirect Impacts

The city's Preliminary Engineering Report (PER) states: *the City will... ensure through local zoning laws or other means, that future development, as well as future collection system or treatment works projects connecting to the SRF-funded facilities, will not adversely impact wetlands, archaeological/historical/structural resources, or other sensitive environmental resources. The City will require new development and treatment works projects to be constructed within the guidelines of the US Fish and Wildlife, IDNR, IDEM, and other environmental review authorities.*

C. Comments from Environmental Review Authorities

The city and its consultants have been discussing the projects with the environmental review authorities since 2007. The U.S. Fish and Wildlife Service, in correspondence dated April 3, 2009, stated: *Based on our review of the February 9, 2009 memorandum and our March 10, 2009 discussion with* (the city's engineering consultant), *we believe that the cofferdammed open-cut method of laying the proposed sewer line is acceptable for this project, with incorporation of the mitigation plan as described in the Memorandum. Fish and mussels that might be trapped within the cofferdam must be salvaged and returned to suitable habitat within the river. Water from project dewatering activities must be handled in accordance with requirements of the Indiana Department of Environmental Management.*

In correspondence dated March 9, 2009, the Natural Resources Conservation Service stated: *The project...will not cause a conversion of prime farmland.*

In correspondence dated July 9, 2009, the IDNR Division of Historic Preservation and Archaeology stated: *Based on our analysis, it has been determined that no historic properties will be altered, demolished, or removed by the proposed project. We concur with the archaeological report that no further archaeological investigation will be necessary. If any*

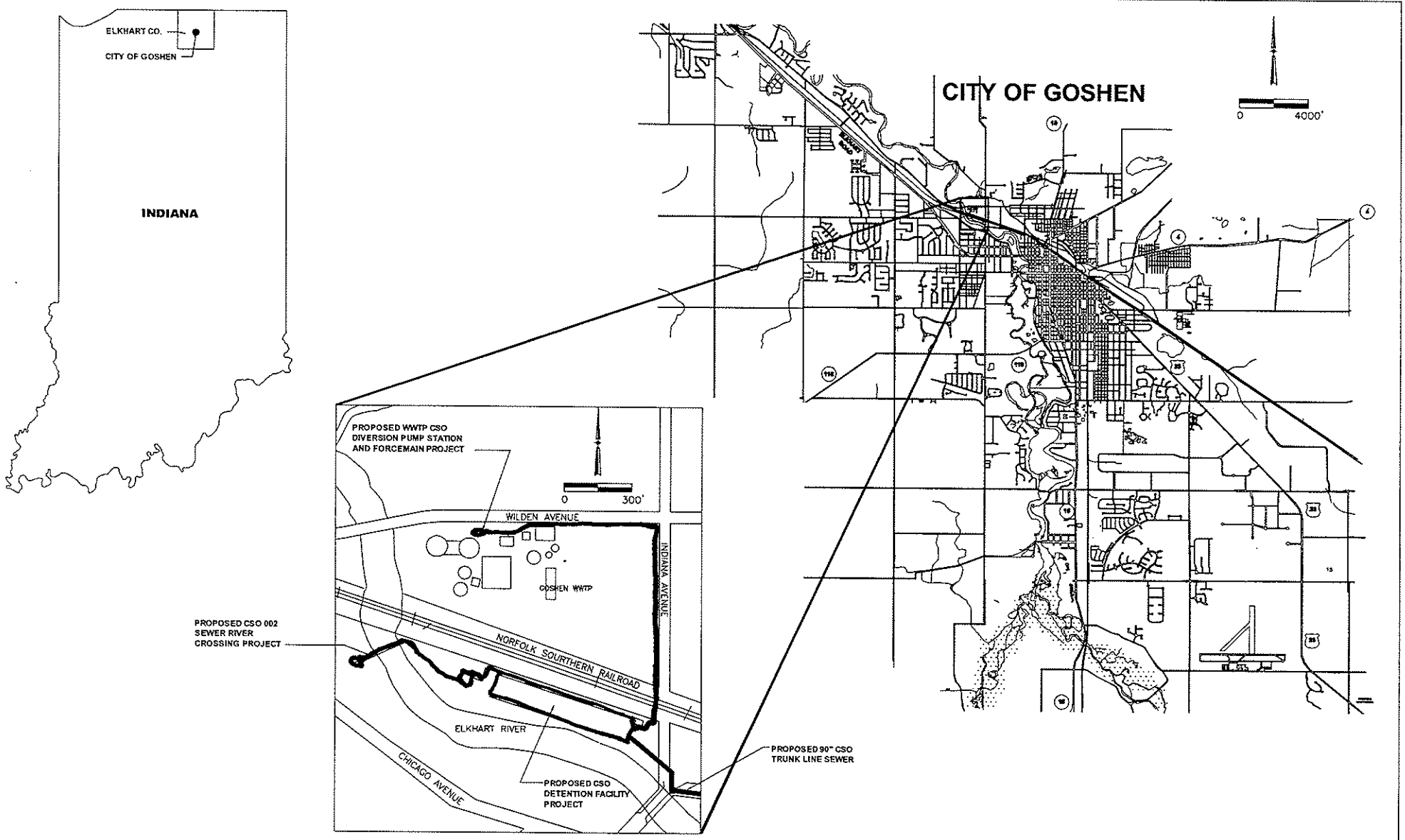
archaeological artifacts, features, or human remains are uncovered during construction, state law (Indiana Code 14-21-1-27 and 29) requires that the discovery must be reported to the Department of Natural Resources within two (2) business days.

VIII. Mitigation Measures

The city's PER, as it relates to the CSO Detention Facility, Diversion Pump Station, and 90-inch Trunk Line, states: *Mitigation measures will be taken to limit the environmental impact of these projects on the site. The largest potential impact on the site will be from erosion. Special care has been taken to avoid the potential problem.* The city's consultants have developed an Erosion Control Plan for the CSO Detention Facility and the CSO Diversion Pump Station and Force Main. The PER further states: *Mitigation measures to lessen and compensate for wetland impacts cited in comment letters about the project from the Indiana Department of Natural Resources and the U.S. Fish and Wildlife service will be implemented. Mitigation measures cited in comment letters from the Indiana Department of Natural Resources and the U.S. Fish and Wildlife Service will be implemented. Following construction, five native trees will be planted for each tree which is removed that is 10-inches or greater in diameter.*

IX. Public Participation

A properly noticed Public Hearing was held on April 7, 2009 at 7:15 pm at the Police and Courts Building, 111 E. Jefferson Street. Questions at the hearing related to the property tax charge to control surface water runoff and the possibility of separating the combined from the sanitary sewers. There were no written comments received by the utility during the 5-day period following the public hearing.



DONOHUE & ASSOCIATES

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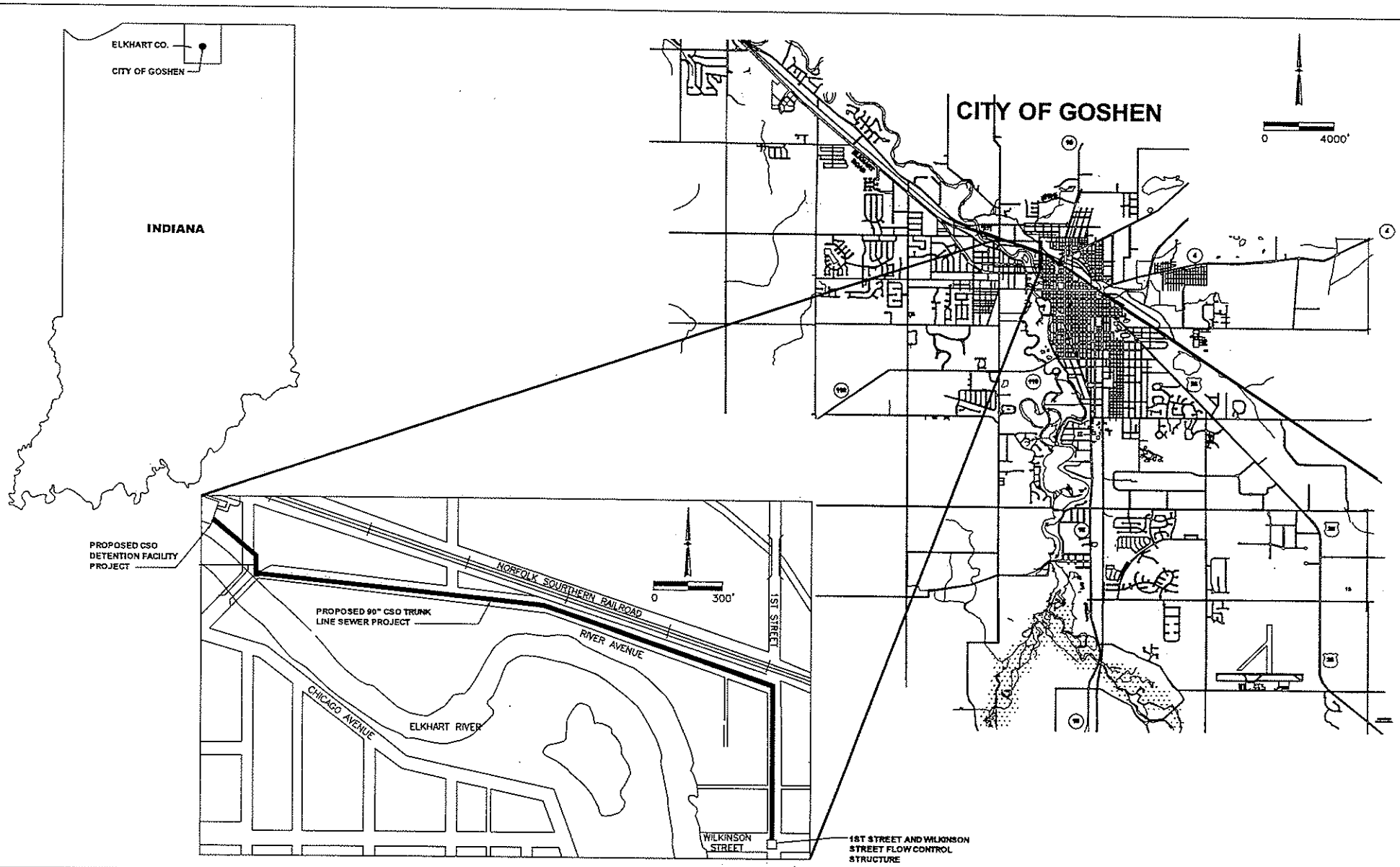
MARCH, 2009

FIGURE 1-1
LOCATION MAP
CITY OF GOSHEN
CSO ABATEMENT PROJECTS
PRELIMINARY ENGINEERING REPORT

GOSHEN, INDIANA



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MARCH, 2009

FIGURE 1-2
LOCATION MAP
CITY OF GOSHEN
CSO ABATEMENT PROJECTS
PRELIMINARY ENGINEERING REPORT

GOSHEN, INDIANA

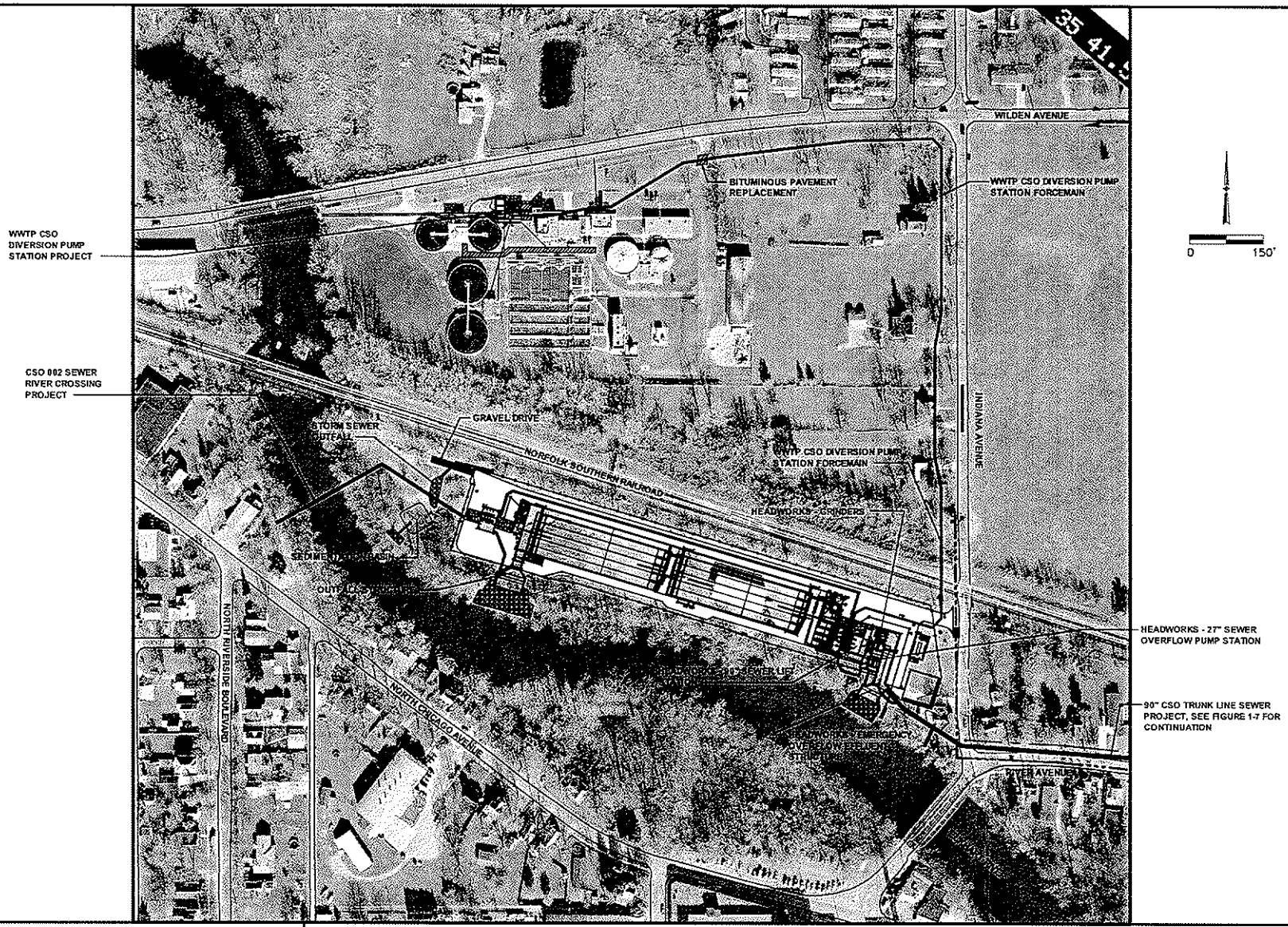

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FIGURE 1-6

PROJECT AREAS: WWTP CSO PUMP STATION, CSO 002 RIVER CROSSING, CSO DETENTION FACILITY

CITY OF GOSHEN
CSO ABATEMENT PROJECTS
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11582 JUNE, 2009 GOSHEN, INDIANA

Elkhart Township (50001-050)

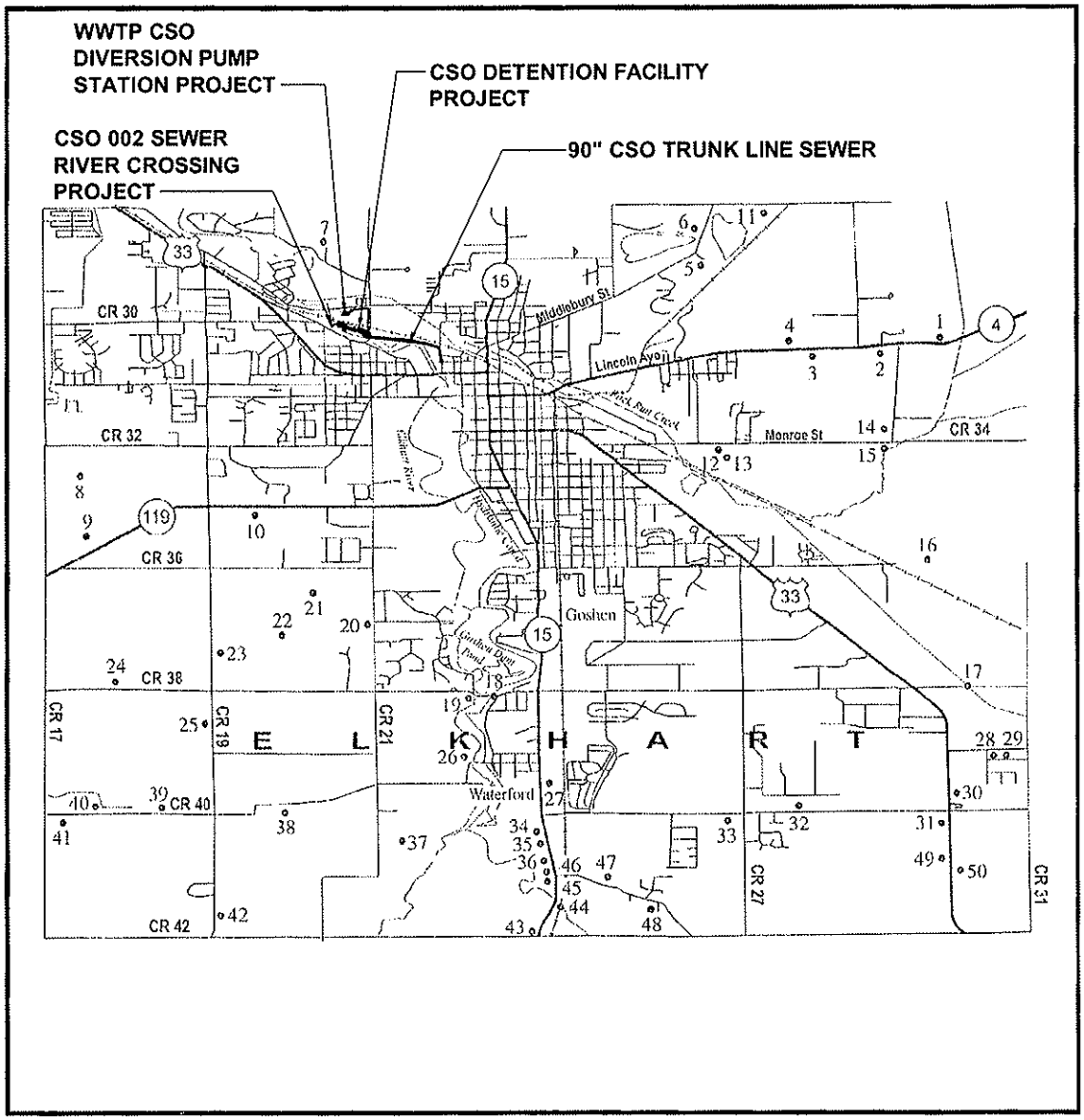

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FIGURE 5-1
HISTORIC SITES & STRUCTURES - ELKHART TOWNSHIP
CITY OF GOSHEN
CSO ABATEMENT PROJECTS
PRELIMINARY ENGINEERING REPORTS

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Goshen Scattered Sites (53001-244)

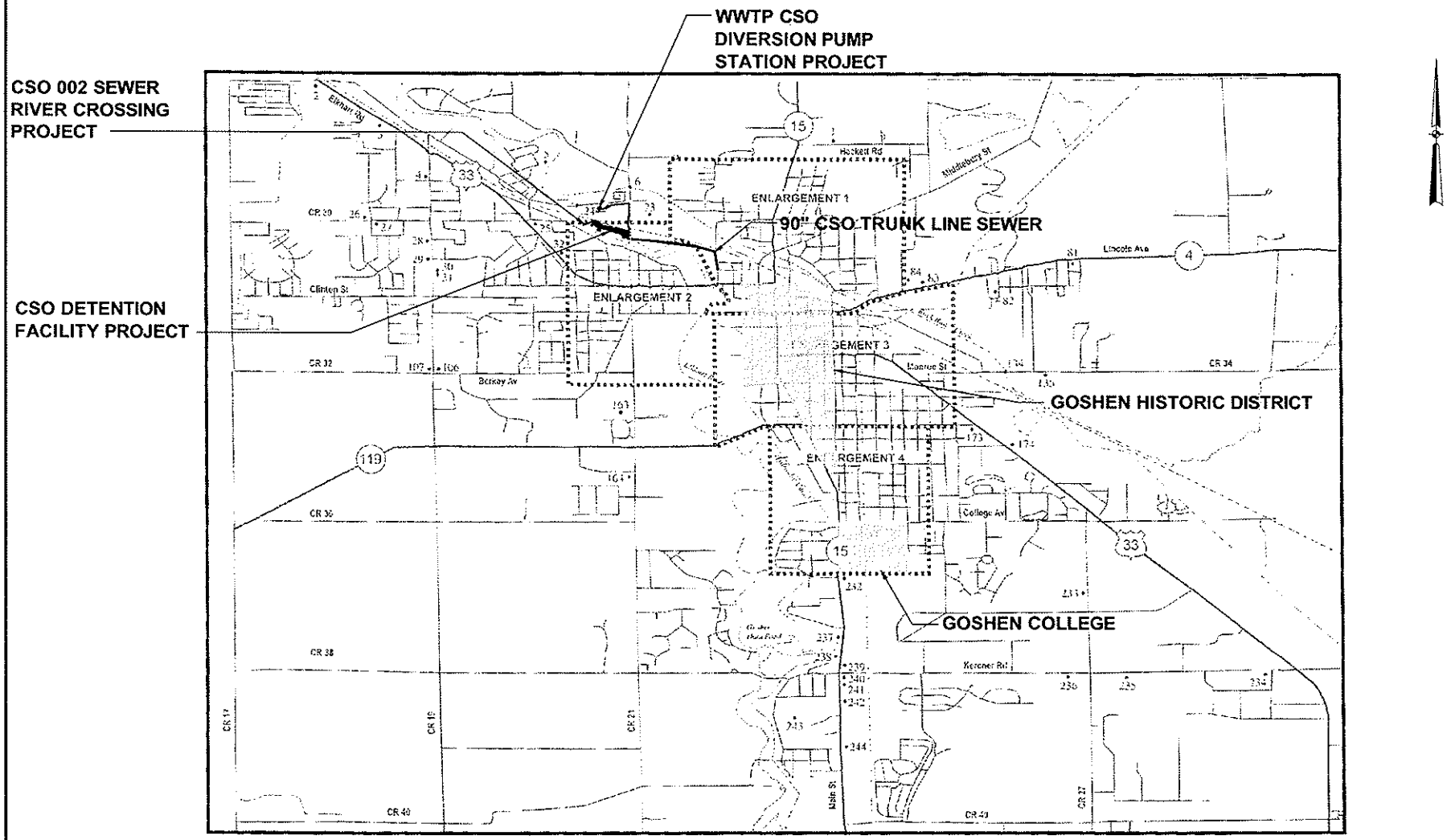

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FIGURE 5-2
HISTORIC SITES & STRUCTURES - GOSHEN SCATTERED SITES
CITY OF GOSHEN
CSO ABATEMENT PROJECTS
PRELIMINARY ENGINEERING REPORT

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Goshen Scattered Sites Enlargement 1 (53001-244)

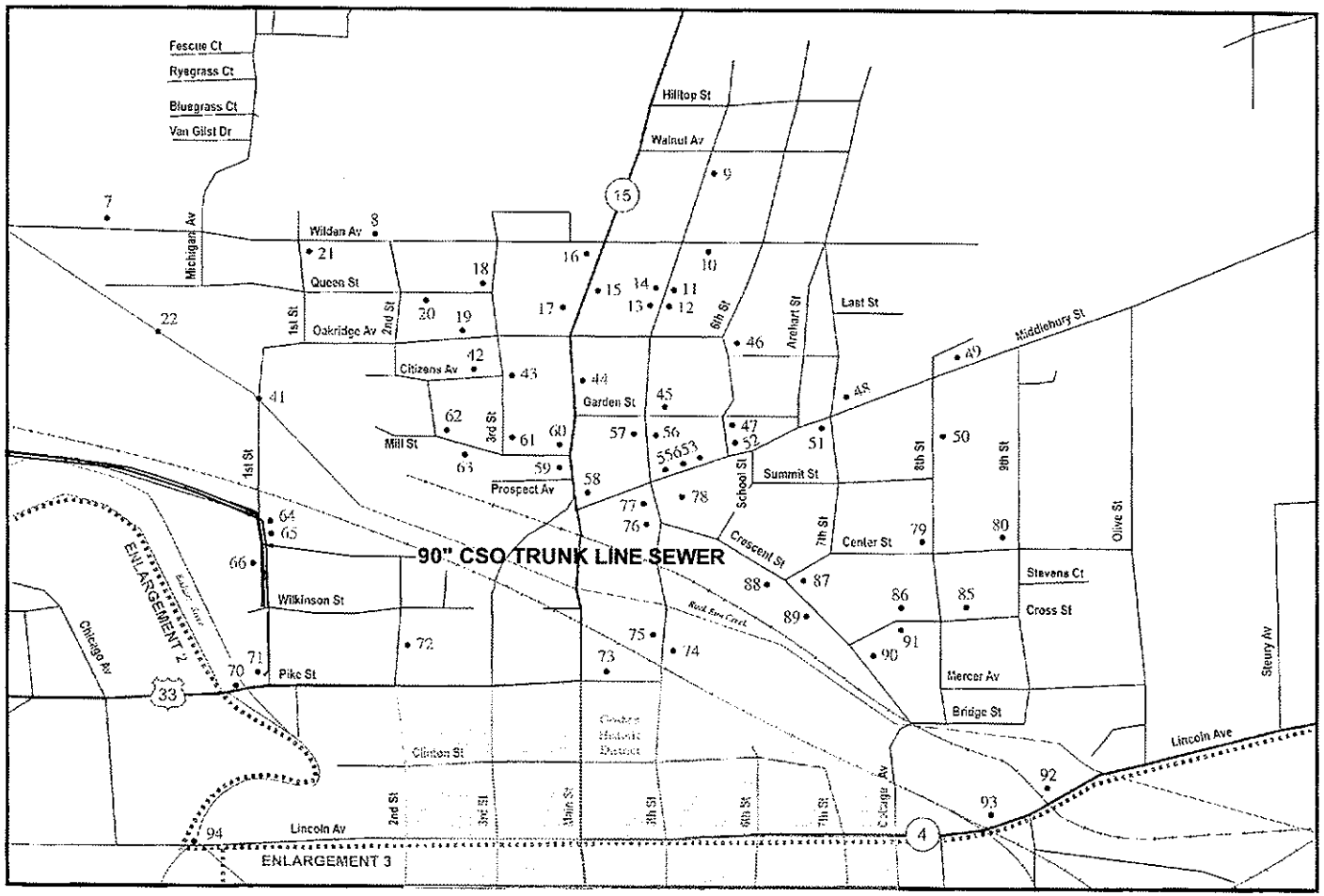

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FIGURE 5-3
HISTORIC SITES & STRUCTURES - GOSHEN SCATTERED SITES ENLARGEMENT 1
CITY OF GOSHEN
CSO ABATEMENT PROJECTS
PRELIMINARY ENGINEERING REPORT

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Goshen Scattered Sites Enlargement 2 (53001-244)

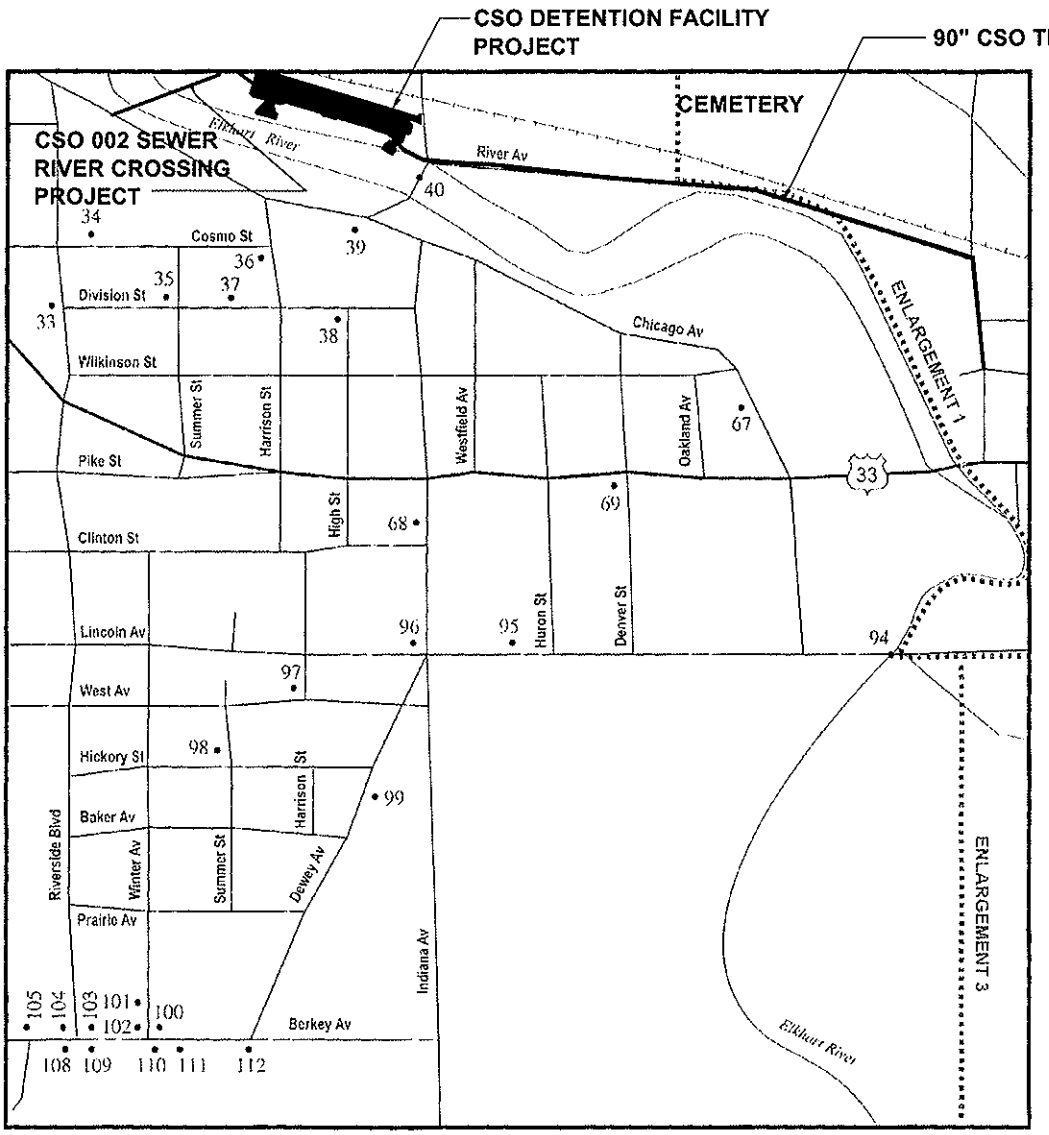

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FIGURE 5-4
HISTORIC SITES AND STRUCTURES - ENLARGEMENT 2
CITY OF GOSHEN
CSO ABATEMENT PROJECTS
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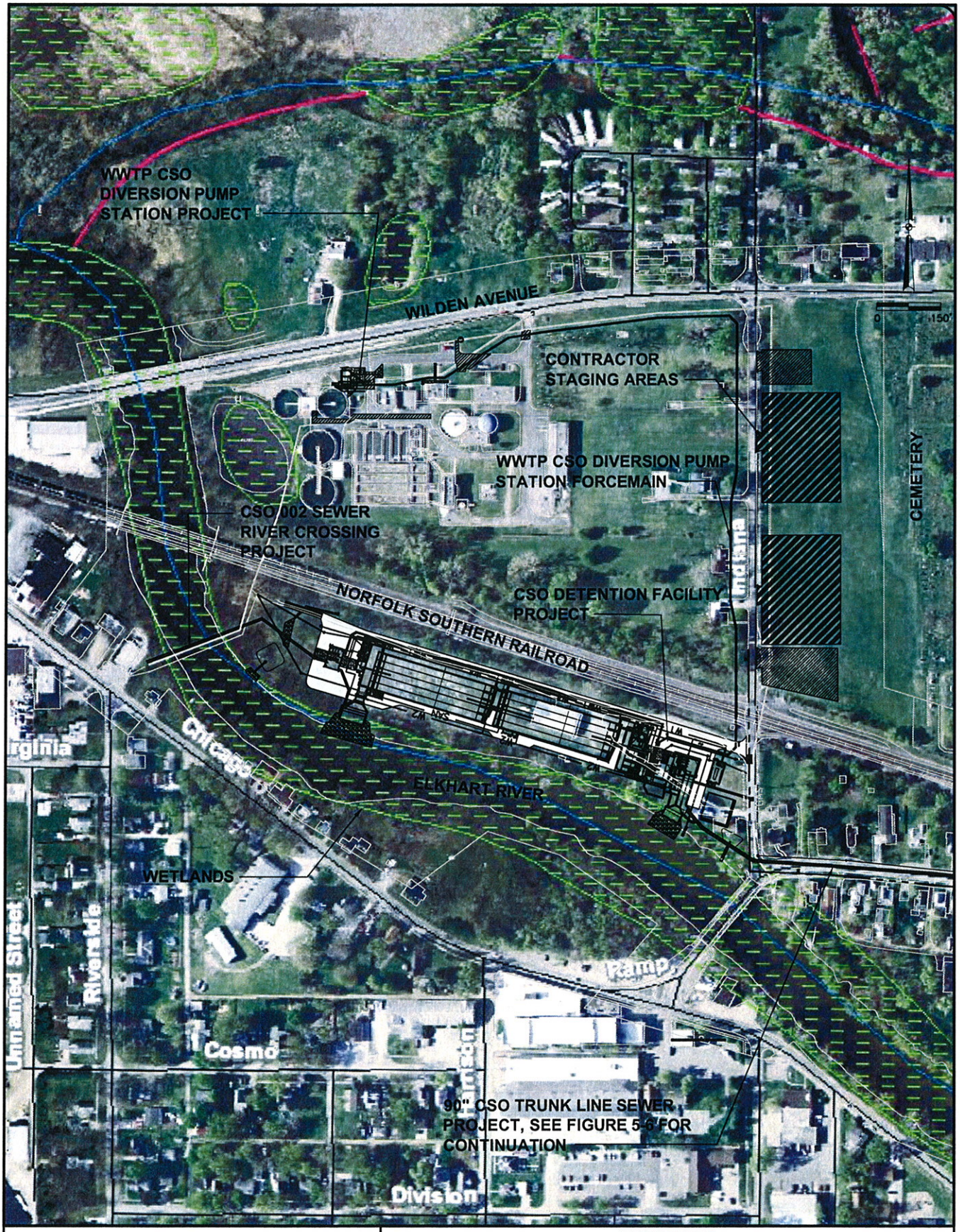

FIGURE 5-5
WETLANDS MAP
CITY OF GOSHEN
CSO ABATEMENT PROJECTS
PRELIMINARY ENGINEERING REPORTS

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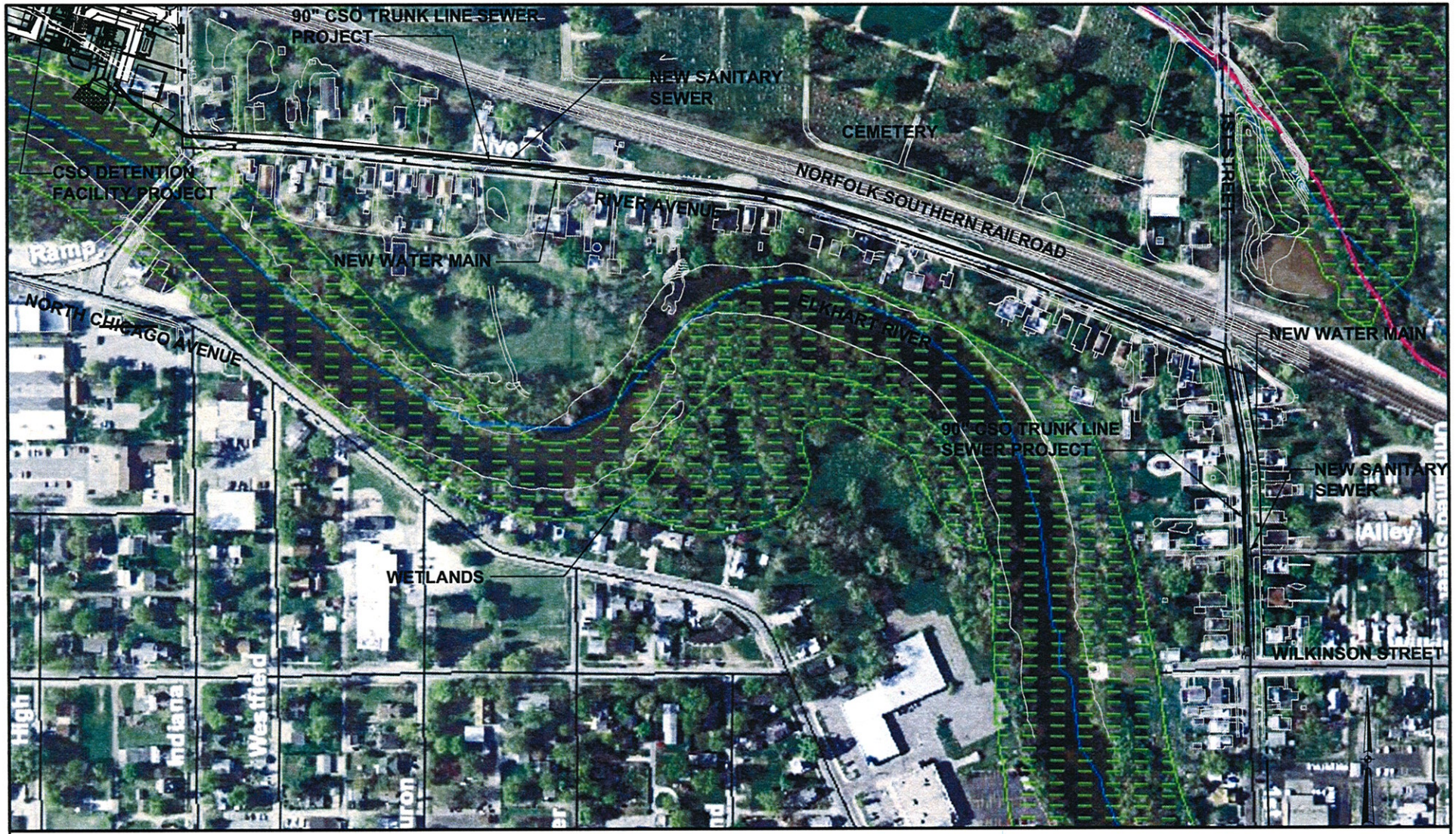

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FIGURE 5-6
WETLANDS MAP
CITY OF GOSHEN
CSO ABATEMENT PROJECTS
PRELIMINARY ENGINEERING REPORT

GOSHEN, INDIANA

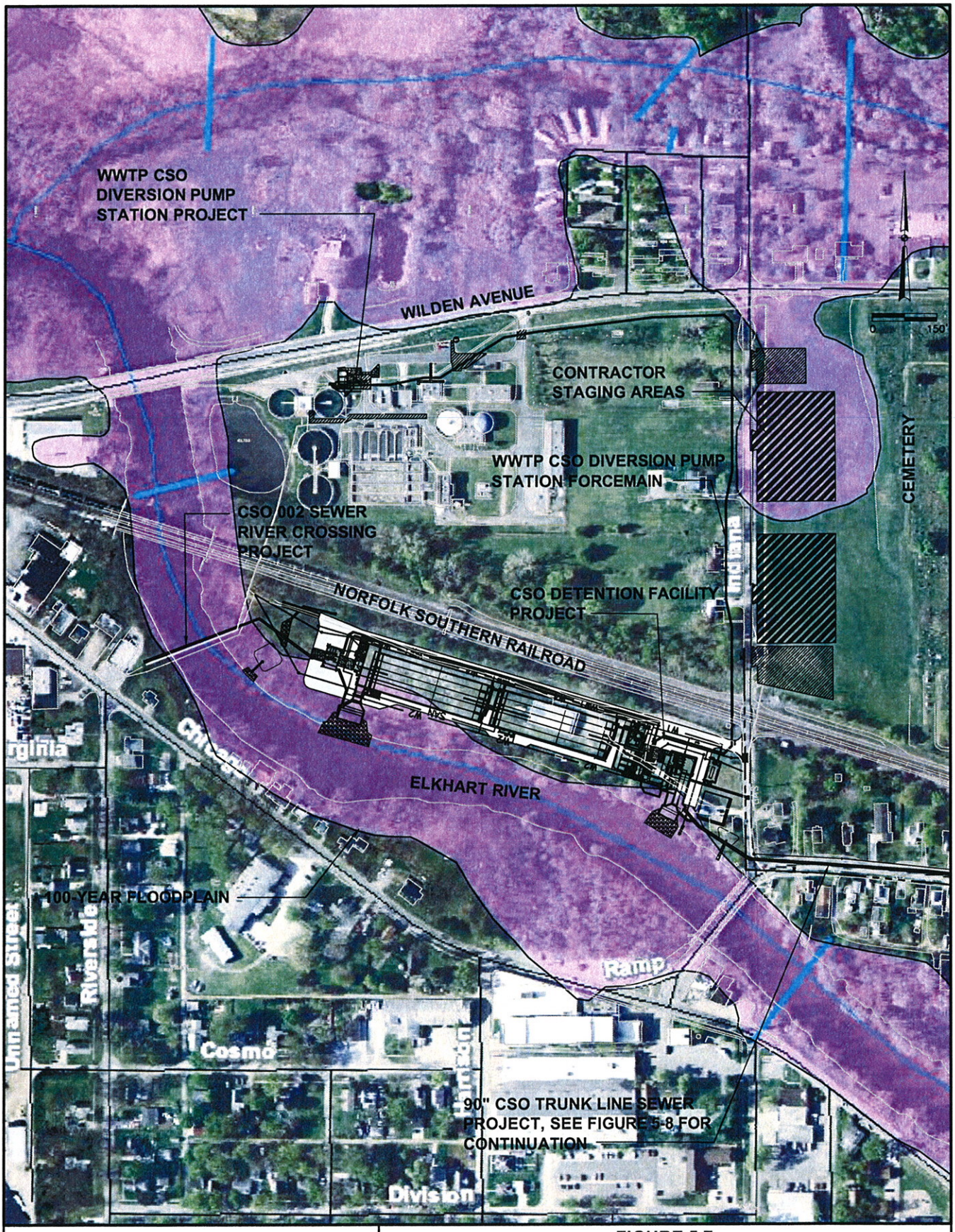

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FIGURE 5-7
FLOODPLAIN MAP
CITY OF GOSHEN
CSO ABATEMENT PROJECTS
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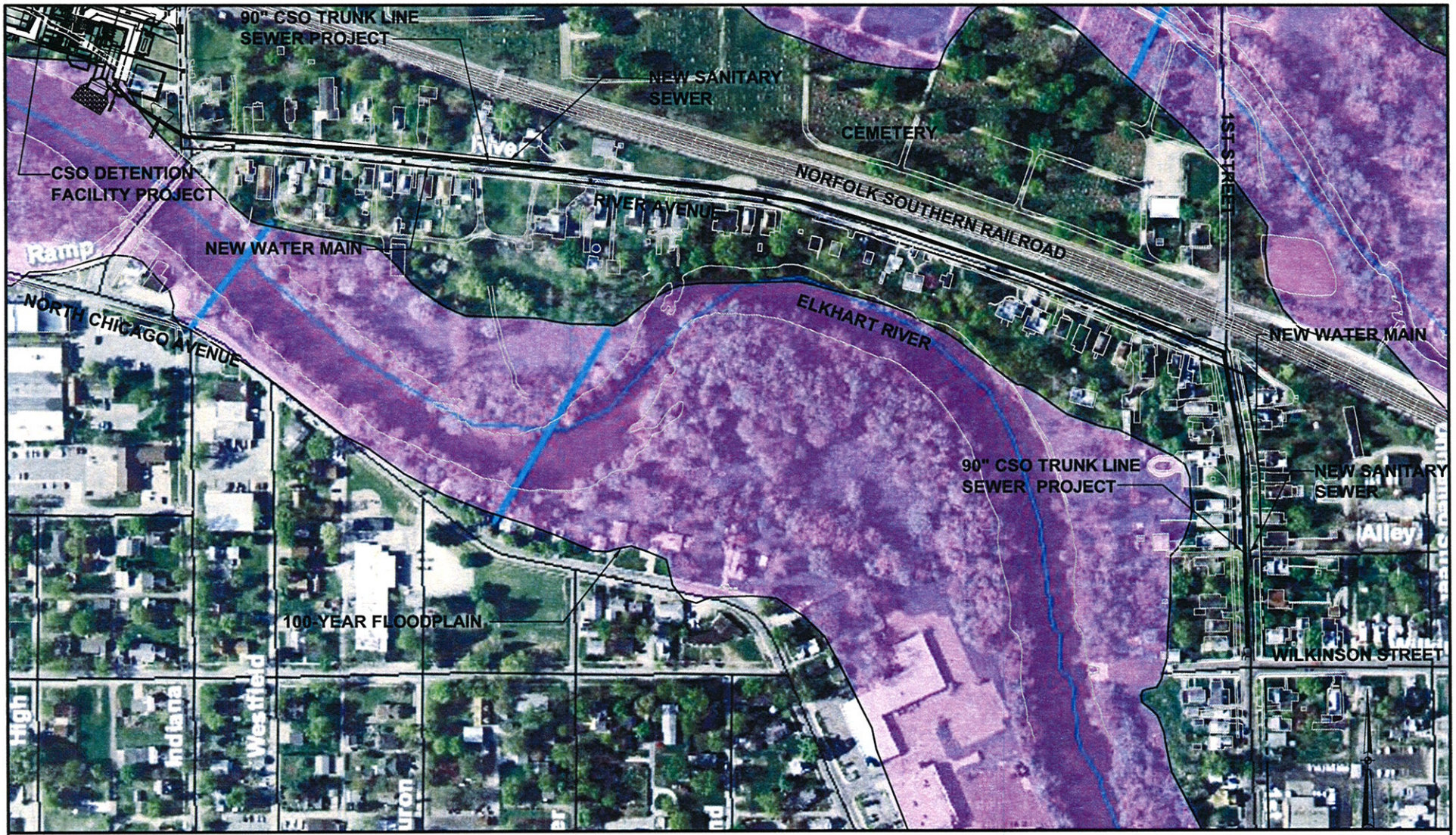

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FIGURE 5-8
FLOODPLAIN MAP
CITY OF GOSHEN
CSO ABATEMENT PROJECTS
PRELIMINARY ENGINEERING REPORT

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